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Recent Changes in Milk Production

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Take as a 'milk ratio', the percentage of annual total of milk for England and Wales which is produced in a given area of crops and grass (i.e. total farmland excluding rough grazing) divided by the acreage. The weather factor is 'effective transpiration', being the cumulative potential transpiration between April and September when the soil moisture deficit within the main grass root is less than a figure which depends on the type of soil (generally in the range 1.5 to 2.2 inches). The 1946 and 1960 figures are quoted from Outlook on Agriculture Vol IV No. 6 302-309; the effective transpirations quoted from Agric. Meteorl. Vol 4 pp. 321-338. The quoted 1969 figures are those for the period April 1969 - March 1970. The letters by the counties are the A, B, C, classification of the Milk Marketing Board.

Area	Effective Transpiration	Acreage (thousands)	Milk Ratio 1946	1960	1969	1960-69 change
Northern Region	15.00	3071	2.9	3.1	3.3	+0.2
A. Westmoreland	15.90	210	4.5	5.9	6.5	+0.6
A. Cumberland	15.80	490	4.7	6.2	7.3	+1.1
B. North Riding	14.95	782	2.9	3.1	3.3	+0.2
B. Durham	14.80	355	3.7	3.1	2.7	-0.4
B. Northumberland	14.75	592	1.4	1.3	1.1	-0.2
B. East Riding	14.50	642	1.9	1.5	1.5	0.0
Northwestern Region	15.55	2894	8.1	7.3	7.4	+0.1
A. Lancashire	16.30	600	7.3	7.8	7.9	+0.1
A. Cheshire	16.15	448	12.9	11.9	12.0	+0.1
A. Stafford	15.55	501	9.4	8.5	8.9	+0.4
A. Derbyshire	15.20	404	8.5	7.6	7.7	+0.1
B. West Riding	14.90	941	4.7	4.1	4.1	0.0
Eastern Region	13.60	3916	1.6	1.3	1.0	-0.3
C. Norfolk	13.90	999	2.2	2.0	1.5	-0.5
C. Kesteven	13.80	401	0.9	0.8	0.8	0.0
C. Lindsey	13.75	827	1.2	0.9	0.9	0.0
C. Holland	13.60	240	0.4	0.2	0.1	-0.1
C. Suffolk	13.50	733	2.3	2.1	1.5	-0.6
C. Cambridge	13.40	258	1.2	0.7	0.5	-0.2
C. Soke of Peterborough	13.15	42	2.3	1.5	1.0	-0.5
C. Isle of Ely	13.10	200	0.5	0.3	0.3	0.0
C. Huntingdon	13.10	216	1.3	0.9	0.6	-0.3

/East Midland Region

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Area	Effective Transpiration	Acreage (thousands)	Milk Ratio 1946	1960	1969	1960-69 change
East Midland Region	14.10	2051	3.3	2.7	2.5	-0.2
B. Warwick	14.45	441	4.2	3.5	3.4	-0.1
B. Leicester	14.40	431	4.7	4.0	3.7	-0.3
B. Rutland	14.05	83	1.1	0.6	0.6	0.0
C. Northampton	13.85	482	2.3	1.9	1.7	-0.2
C. Nottingham	13.80	386	3.1	2.5	2.3	-0.2
C. Bedford	13.70	228	1.9	1.4	1.0	-0.4
West Midland Region	15.40	2244	4.0	4.3	4.4	+0.1
A. Monmouth	16.20	175	3.4	4.4	5.5	+1.1
A. Shropshire	15.70	697	5.8	6.1	5.7	-0.4
A. Gloucester	15.50	593	4.6	4.9	4.8	-0.1
A. Hereford	15.15	441	1.5	2.1	2.5	+0.4
B. Worcester	14.65	338	2.9	3.1	3.2	+0.1
North Wales Region	15.90	993	4.2	4.5	4.2	-0.3
A. Anglesey	16.05	134	2.3	3.3	2.5	-0.8
A. Caernarvon	16.00	128	4.5	4.1	3.4	-0.7
A. Flint	16.00	115	8.9	8.6	8.4	-0.2
A. Merioneth	15.95	97	2.5	2.1	1.6	-0.5
A. Denbigh	15.85	250	5.0	5.3	5.0	-0.3
A. Montgomery	15.85	269	2.6	3.8	3.8	0.0
South Wales Region	15.85	1430	4.1	5.1	5.2	+0.1
A. Glamorgan	16.05	195	4.8	4.4	4.0	-0.4
A. Carmarthen	16.00	379	5.6	7.7	7.7	0.0
A. Pembroke	15.85	284	4.9	6.5	7.7	+1.2
A. Brecon	15.80	166	1.5	1.7	1.1	-0.6
A. Radnor	15.70	161	0.4	0.4	0.3	-0.1
A. Cardigan	15.50	245	3.8	5.3	5.5	+0.2
Southern Region	14.40	1652	4.0	3.8	3.5	-0.3
B. Hampshire (and I.O.W.)	14.60	606	4.7	4.8	4.5	-0.3
B. Buckingham	14.35	355	3.9	3.2	3.1	-0.1
B. Oxford	14.30	378	3.0	2.7	2.5	-0.2
B. Berkshire	14.20	313	4.0	3.8	3.3	-0.5
Mid-Western Region	15.40	1876	7.3	7.5	7.8	+0.3
A. Somerset	15.65	794	7.6	8.3	8.8	+0.5
A. Dorset	15.35	453	7.3	8.0	8.4	+0.4
A. Wiltshire	15.05	629	6.8	6.5	5.9	-0.6
Far-Western Region	16.05	1790	3.5	4.7	5.9	+1.2
A. Cornwall	16.25	641	4.0	5.1	5.8	+0.7
A. Devon	15.95	1149	3.3	4.7	6.0	+1.3

/South-Eastern Region

Area	Effective Transpiration	Acreage (thousands)	Milk Ratio 1946	1960	1969	1960-69 change
South-Eastern Region	13.85	2351	3.6	3.2	2.9	-0.3
B. W. Sussex	14.55	249	5.4	5.1	5.1	0.0
B. E. Sussex	14.50	324	5.7	5.3	5.0	-0.3
B. Surrey	14.20	174	4.8	4.9	5.2	+0.3
B. Hertfordshire	14.15	269	3.2	2.5	2.2	-0.3
C. Greater London	13.95	48	4.1	2.9	2.2	-0.7
C. Kent	13.90	618	2.1	2.2	1.9	-0.3
C. Essex	13.05	669	3.1	2.3	1.7	-0.6

Milk Marketing Board Areas

Area	Acreage (thousands)	Milk Ratio 1946	1960	1969	Change 1960-1969
A	10648	5.6	6.1	6.4	+0.3
B	7273	3.5	3.3	3.2	-0.1
C	6347	2.0	1.6	1.3	-0.3

Smith Gradings (Agr. Meteorol. Vol 4. p. 330-331)

	Effective Transpiration	Acreage (thousands)	Milk Ratio 1946	1960	1969	Change 1960-1969
1.	16.20	2815	6.5	7.0	7.2	+0.2
2.	15.80	4567	4.6	5.5	6.0	+0.5
3.	15.45	1792	7.4	7.4	6.9	-0.5
4.	15.05	2256	4.7	4.7	4.7	0.0
5.	14.80	2832	4.2	3.8	3.3	-0.5
6.	14.40	3307	3.9	3.5	3.3	-0.2
7.	13.90	3286	2.2	2.0	1.7	-0.3
8.	13.60	2286	1.5	1.2	1.0	-0.2
9.	13.05	1127	2.3	1.7	1.2	-0.5

The correlation between the effective transpiration and milk ratio is now 0.96 (in 1946 it was 0.86).

The only significant changes in contradiction to climate are in North Wales (especially Anglesey and Caernarvon), in Glamorgan and in Surrey.

Figures for total cattle in the Welsh counties have increased in accordance with climate over this period, which suggests that beef is being preferred to milk.

The outstanding increases are in Cumberland, Westmoreland, Monmouth, Cornwall, Devon and Pembroke.

Any comments or suggestions on this paper should be sent to the Author.

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